

Engineering 7811 Assignment 2 Answers/Hints

1. Given in notes.
2. Given on assignment.
3. Hint: I found the law of cosines helped.
4. (a) RHC – but show it with a table of values and a sketch. (b) Linear. $\phi_0 = 63.4^\circ$ ccw from x -axis, but also state what plane the antenna should be in.
5. (a) $\vec{\mathcal{P}}_{a\max} = 0.15\pi \mu\text{W}/\text{m}^2$; (b) $1.88 \times 10^{-2} \text{ V}/\text{m}$; (c) $395 \mu\text{W}$.
6.
$$\rho = \frac{-jJ_0kz}{\omega|z|} \cos \left[k \left(\frac{\ell}{2} - |z| \right) \right]$$